

Applicant : Paul G. Yock
Appl. No. : 10/691,900
Examiner : Francis J. Jaworski
Docket No. : 701470.4086

Amendment to the Specification

Please amend paragraph 20 as follows:

Fig. 6A is a schematic block diagram of the electrical and electronic apparatus utilized in the system.

Fig. 6B is a schematic block diagram of the electrical and electronic apparatus with a micromotor at the distal extremity of the catheter.

Please amend paragraph 37 as follows:

A male fitting 78 (see Fig. 1) is threaded into the threaded bore 67. A single arm adapter 81 is mounted in the male fitting 78 and carries an arm 82 having thereon a balloon inflation port 83 that is in communication with the lumen 44 in the balloon tube 43 disposed in the tubular assembly 12. The single arm adapter 81 is secured to a rotating adapter 86 of a conventional type and through which the tubular assembly 12 extends. Another single arm adapter 87 is mounted in the rotating adapter and is provided with a side arm 88 having an infusion port 89 disposed therein which is in communication with the infusion lumens 17 and 18 provided in the tubular assembly 12. A tapered fitting 91 is mounted in the single arm adapter 87 and is provided with a threaded bore 92 which carries an O-ring 93 that is adapted to be engaged by a male type fitting 94 to form a liquid-tight seal between the tubular assembly 12 and the torque cable 32 which extends therethrough. The torque cable 32 is secured to a suitable drive member such as a clutch member 98 of the type described in European application 163 502 and U.S. patent No. 4,771,774, the disclosures of which are incorporated herein by reference. The clutch member 98 is adapted to be secured to a motor drive means of the type described in U.S. Patent No. 4,771,774 consisting of a motor drive unit which in the present application is identified as a motor 99 (see Fig. 6A). The motor 99 is driven by and is under the control of electronic circuitry forming a

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part of system 49. The part of the system 49 shown in block diagram form is substantially conventional and can be of a suitable type such as certain equipment identified as Model 851B manufactured by Advanced Technology Laboratories, Inc., of Bothel, Washington. As shown in Fig. 6A, such apparatus includes a timing and control block 102 that supplies pulses to a transmitter 103. The output of the transmitter 103 is supplied through a transmit receive switch 104 which supplies the signals on the conductors 73 and 74 through the slip rings 62 and 63 onto the conductors 56 and 57 connected to the crystal 51. During the time that the transmitter 103 is supplying high frequency energy to the crystal, the crystal assembly 52 is being rotated by the motor driving the torque cable 32 with the motor 99 being under the control of the timing and control block 102. The motor 99 is of a type such as an open loop stepping motor or a closed loop servo controlled motor which can be driven by the timing and control block 102.

Please amend paragraph 38 as follows:

As an alternative to the use of an external motor 99 connected to the cutter 29 by torque cable 32, it would be possible to construct catheters according to the present invention utilizing micromotors within the distal extremity of the catheter. The micromotors 99' could be attached to directly rotate the cutter and transducer (or reflective surface as described hereinafter) typically by mounting at the end of a nonrotating cable 32' analogous to torque cable 32, as shown in Fig. 6B.